VORONOV, F.D.; TRIFONOV, A.G.; KHUSID, S.Ye.; DIKSHTEYN, Ye.L.; VAL'PITER, E.V. SNEGIREV, Yu.B.; ANTIPIN, V.G.; Prinimali uchastiye: SMIRNOV, L.A.; KAZAKOV, A.I.; YELIZAROV, A.G.; KULAKOV, A.M.; KOZHANOV, M.G.; ZARZHITSKIY, Yu.A.; ARTAMONOV, M.P.; GOL'DENBERG, I.B.; ROMANOV, V.M.; NOVIKOV, S.M.; MAYEVSKIY, A.B.; DMITRIYEV, I.; MANZHULA, M.; BEREZOVOY, I.A.; ZUTS, K.A.; BADIN, S.N.; TATARINTSEV, G.; MITROFANOV, N.G.; GAVRILOVA, K.M.; IVANOV, N.I.

Operating a 400-ton open-hearth furnace on casing-head gas. Stal' 20 no. 7:594-598 Jl '60. (MIRA 14:5)
(Open-hearth furnaces--Equipment and supplies)

S/133/62/000/008/003/003
A054/A127

AUTHORS: Khusid, S.Ye.; Kozhevnikov, V.V.

TITLE: The application of computers at the Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine)

PERIODICAL: Stal', no. 8, 1962, 760 - 763

TEXT: The computers used at this combine operate either on non-heating transistor units or on electron tubes. Some of the computers operate continuously and are used to obtain information and to control the characteristics of a production process, while others operate discretely under current or voltage impulses. The computers and computer-systems have been designed by the Tsentral'nyy nauchno-issledovatel'skiy institut kompleksnoy avtomatizatsii (TsNIIKA) (Central Scientific Research Institute of Overall Automation), Nauchno-issledovatel'skiy institut upravlyayushchikh vychislitel'nykh mashin (NIIUVM), (Scientific Research Institute of Control Computers), Leningradskiy institut inzhenerov zheleznodorozhnogo transporta, (LIIZhT), (Leningrad Institute of Railway Engineers), Leningradskiy gornyy institut (Leningrad Mining Institute), Tbilisskiy nauchno-issledovatel'skiy institut sredstv avtomatizatsii (Tbilisi Scientific Research Institute of Means

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of Automation), Institut avtomatiki i telemekhaniki (IAT), (Institute of Automation and Telemechanics), TsNIIChM, etc. Computers were first applied by the combine for controlling flying shears which cut strips up to 10 mm thick on the 2,500 mm stand into sheets up to 2,350 mm wide and 2.5 - 12 m long. The schematic operation diagram of the shears which is given in a figure is based on the following algorithm:

$$A - \sum_{0}^{A} n = 0,$$ (A = represents the given sheet length with

correction, n = the number of impulses obtained from the path transmitter). In cutting the first sample sheet the following algorithm is used:

$$A + B - \sum_{0}^{C} n = 0 \quad (B = \text{constant coefficient}, C = A + B).$$

Controlling this operation by computer saved 1 million rubles a year, mainly by cutting the deviation in sheet length from 300 to 30 mm. The instrument costs 1000 rubles. The Сталь-1 (Stal'-1) type computer controls the cutting out of sheets without losses by means of planetary shears on the 450 stand. The computer, which is mounted between the 630 stand and the shears controls with a

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photorelay the length of sheets to be cut and registers on a punched card the theoretical weight of sheets turned out by the 630 and 450 stands, the number of slabs rolled, the number of sheets passing the shears, the number of heats, etc. The data are recorded by the standard ПД -45-2 (PD-45-2) type punching machine. The apparatus consists of ferrite-diode cells, which are divided into measuring, cutting-out and weighing units. The Stal-1 computer increased the annual output of the stand by 22,000 tons and saved about 400,000 rubles. The УВУ (UVU) computer is used in combination with a photoelectric flaw detector, radioactive thickness gauge, electro-magnetic switch-over devices and photorelays for the continuous elimination of defective sheets, 0.2 - 0.6 mm thick, which move at a 5 m/sec rate and are cut in sizes of 512 - 1500 mm. Sheets not coming up to the standard thickness or having holes are removed from the flow line and directed into the rejects receiver. The computer operates on the principle of the shift register and the following mathematical function: $x = A \cdot 2^n - \Delta - \Delta_1$ [where x = the coordinate of the position of defective sheet in relation to the flaw detector axis; A = measuring pitch of this coordinate which equals one sheet length; n = number of the cut sheets after the defect has been detected, (n = 0,1,2...); Δ = correction for the ratio of sheets, necessary because the distance between the flaw detector and switch-over is not the integral multiple of the number of sheets; Δ_1 = correction for the transit of the strip into the sheet]. The block diagram of UVU, which

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saves 400,000 rubles a year, is given in a figure. Computers are used in ore mining, to supply the dressing plants with ores of the prescribed composition. The algorithm governing this control process consists of two parts, one relating to the changes in the quality and quantity of the ore for every kind of ore mined, based on information obtained from the mining machines, regarding the actual conditions of ores. In the computer information is fed also on stocks in hand, the amounts required by the dressing plant, etc. Based on the information obtained the computer informs on the amount of ore dispatched, the iron content of the ore, the deviations from the standard composition. It makes any necessary corrections, determines the numbers of RR cars required for the dressing plant and where the cars are needed, moreover the place of discharge of the ores. The car trains are controlled by the transport algorithm, based on the distances of block sections, junctions, number of stations to be passed, etc. The collected data are transmitted to the central dispatcher board; the data on the required changes in the processes are produced in print. In 1961, a computer center was established at the Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine), based on the УРАЛ-1 (URAL-1) type computer, with a capacity of 100 instructions per sec., consisting of 800 electron tubes and 3000 crystal diode-rectifiers; the computer covers an area of approximately 40 m^2. Information is fed in by means of punched films passing through a photoelectric instrument, the

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memory device consists of a ferro-lacquer-coated rotating drum, the external storage element is a magnetic tape. The URAL-1 is applied, inter alia, for determining the pattern of rolled products, the natural gas consumption in open-earth furnaces, the weight of finished products, the output of the blooming and the slabbing mills, the load of the principal engines as to root mean square current, the parameters of blast furnace operation. Computer systems with light signals for the operator have been designed for the stripping shops and soaking pits. Apparatus controlling the transport systems operate on mnemonic schemes. For centralised control of blooming mills algorithms have been developed to determine heat conditions (temperature of soaking pits, fuel consumption, etc.); the coordination of blooming and soaking pits and the transport. If there are deviations from the schedules given for these units, the algorithm gives instructions for appropriate changes in the algorithms of heat conditions and transport. This unit of the computer system issues printed information on the time discrepancies between various shops involved, on the condition of soaking pits covering about 500 parameters. The transport algorithm commands the dispatching of slabs onto the blooming mill train and the setting of slabs into the soaking pits with a minimum of heat loss. There are 2 figures.

ASSOCIATION: Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine)

KHUSID, S.Ye.; ITSKOVICH, I.A.; LITVAK, I.S.; LOBOV, I.M.

Using the Ural-1 computer for calculating taperin: devices. Izm. tekh. no.3:56-57 Mr '65. (MIRA 18:5)

KHUSID, S.Ye., inzh.; ZARZHITSKIY, Yu.A., inzh.; KULAKOV, A.M., inzh.; KARPOV, A.A., inzh.; KROLENKO, N.A., inzh.; Prinimali uchastiye: ALIMOV, B.V.; LEONT'YEV, A.I.; BOLOBORODOV, N.M.; KARAGANOV, G.G.; GUR'YANOV, V.N.; OSOKIN, G.F.; KAYZER, V.G.; SOROKOLETOV, A.M.; ZLOBIN, V.K.; VIKTOROVA, T.Ye.; SEMENOV, V.A.; VODENNIKOV, V.F.; SANAYEV, I.K.

Operating a four-zone holding furnace on natural gas with automatic control. Stal' 25 no.5:464-468 My '65.
(MIRA 18:6)

BORODIN, P.M.; LEGIN, Ye.K.; SVENTITSKIY, Ye.N.; KHUSIDMAN, M.B.; SHCHERBAKOV, V.A.

Action of heavy water on the chemical shift of F^{19}. Zhur.strukt.khim. 4 no.2:266-267 Mr-Ap '63. (MIRA 16:5)

1. Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta.
(Deuterium oxide) (Flurine isotopes)
(Nuclear magnetic resonance and relaxation)

L 18943-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(c)-2/EPR/EWP(t)/EPA(bb)-2/EWP(b) Ps-4/
Pt-10/Pu-4 IJP(c) --AT/WH/JD/JG--
ACCESSION NR: AP5000505 S/0080/64/037/011/2375/2382

AUTHOR: Neshpor, V. S.; Ordan'yan, S. S.; Avgustinuk, A. I.; Khusidman, M. B.

TITLE: The effect of the chemical composition of zirconium and niobium carbides in a homogeneous region on their electrical and thermal properties

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 11, 1964, 2375-2382

TOPIC TAGS: refractory carbide, zirconium carbide, niobium carbide, nonstoichiometric carbide, transition metal carbide, carbide electrical property, carbide thermal property

ABSTRACT: Electrical resistivity, absolute thermoelectric power, and thermal conductivity at room temperature have been measured in homogeneous, nonstoichiometric zirconium and niobium carbides, ZrC and NbC, with x varying from 0.6—0.1 to 1. Zirconium and niobium carbides were selected for study as representative of the refractory carbides of the group-IV and group-V transition metals, which are used in certain parts (e.g., cathodes) of thermionic converters. The single-phase

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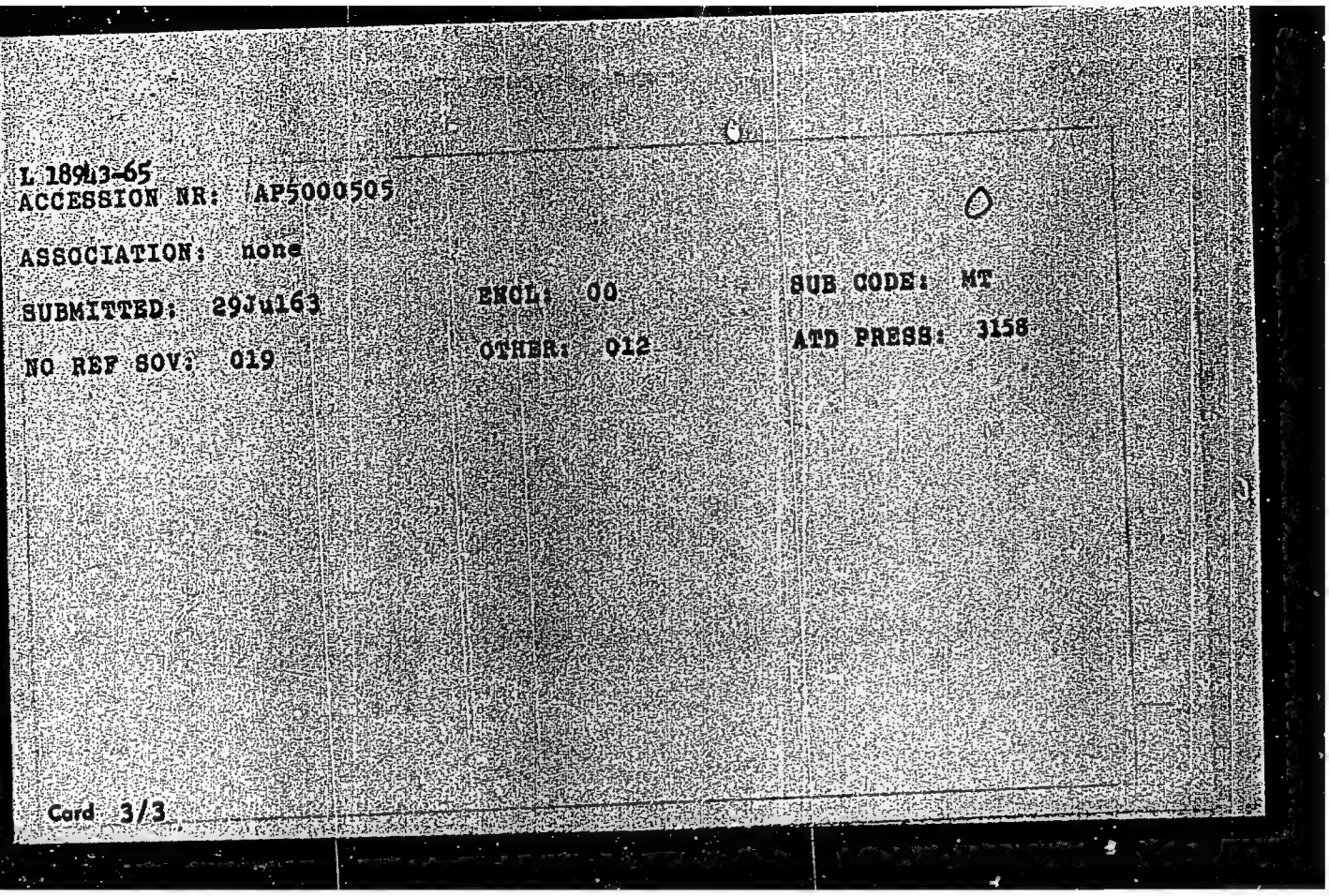
ACCESSION NR: AP5000505

carbide samples were prepared by compacting and vacuum sintering the powdered mixtures of nearly stoichiometric carbides and corresponding metals. Resistivity was measured by a compensating circuit method; thermal conductivity, by the method of steady heat flow. Thermal emf generated in the sample between two parallel plane semiconductor plates served as a measure of the heat flow. The same equipment was used for measuring thermal conductivity as for measuring the thermoelectric power. Experimental data were tabulated and plotted versus carbon defici in MeC_x. The data indicated a substantial difference between the $Me^{IV}C_x$ and $Me^{V}C_x$ carbides in the properties which depend on the electronic configuration of the molecule, i.e., the overall resistivity and thermal emf. The difference in the properties is explained in terms of different effective valence of the metals. Similarity between $Me^{IV}C_x$ and $Me^{V}C_x$ carbides was shown in those properties which depend on lattice dynamics, i.e., 1) resistivity component due to the scattering on vacancies in carbon sublattice, which is evidenced in the pattern of composition-dependence of the molecular rigidity, 2) lattice thermal conductivity, and 3) coefficient of thermal expansion. Orig. art. has: 6 figures, 2 tables, and 12 formulas.

Card 2/3



L 18913-65
ACCESSION NR: AP5000505

ASSOCIATION: none

SUBMITTED: 29Jul63 ENCL: 00 SUB CODE: MT

NO REF SOV: 019 OTHER: 012 ATD PRESS: 3158

Card 3/3

KHURSIK, V.Z.

Possibility of finding oil-bearing reef massifs in the Ural Mountain region portion of Perm Province. Dokl. AN SSSR 164 no.4:891-893 O '65. (MIRA 18:10)

1. Submitted January 9, 1965.

KHUSINOV, A., kand.med.nauk

Ozyhemography in patients with pulmonary tuberculosis during and after the resection of different portions of the lung tissue. Nauch. trudy SamMI 21:137-139 '62. (MIRA 17:5)

1. Iz kafedry patologicheskoy fiziologii Samarkandskogo meditsinskogo instituta i khirurgicheskogo otdeleniya Samarkandskogo oblastnogo protivotuberkuleznogo dispansera.

KHUSINOV, A.A.

COUNTRY : USSR

CATEGORY : Pharmacology and Toxicology. Toxicology. Poisonous Plants

ABS. JOUR. : RZhBiol., No. 5 1959, No. 23294

AUTHOR : Khusinov, A. A.

INST. : Samarkand Medical Institute

TITLE : On the Problem of Nitrogen Metabolism in Experimental Trichodesmotoxicosis

ORIG. PUB. : Nauchn. tr. Samarkandsk. med. in-t, 1957, 15, 193-196

ABSTRACT : In the experimental poisoning of dogs by the seeds of Trichodesma, the nitrogen metabolism is sharply disturbed in the animals. This is expressed by a negative nitrogen balance.

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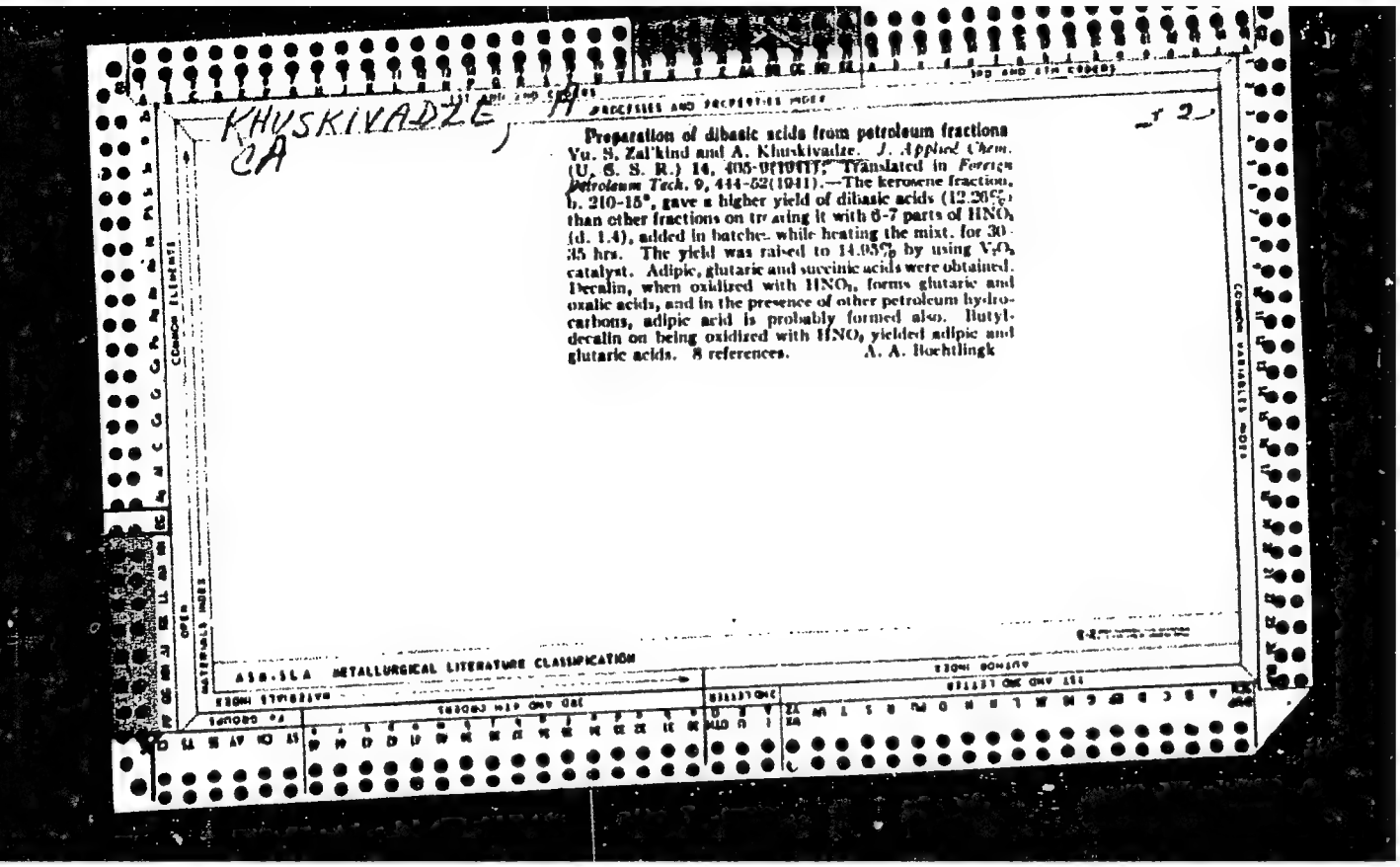

KHVSKIVADZE, A
CA

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Preparation of dibasic acids from petroleum fractions
Yu. S. Zal'kind and A. Khuskivadze. *J. Applied Chem.* (U. S. S. R.) 14, 405-9(1941). Translated in *Foreign Petroleum Tech.* 9, 444-52(1941).—The kerosene fraction, b. 210-15°, gave a higher yield of dibasic acids (12.26%) than other fractions on treating it with 6-7 parts of HNO_3 (d. 1.4), added in batches while heating the mixt. for 30-35 hrs. The yield was raised to 14.05% by using V_2O_5 catalyst. Adipic, glutaric and succinic acids were obtained. Decalin, when oxidized with HNO_3, forms glutaric and oxalic acids, and in the presence of other petroleum hydrocarbons, adipic acid is probably formed also. Butyldecalin on being oxidized with HNO_3 yielded adipic and glutaric acids. 8 references. A. A. Bochtlingk

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

KHUSKIVADZE, A. N.

родного толуола. Баку. 1943. 61 с., 17 табл. Вкл., 10 табл.

Защ. 1943, 29.5.

865. Мзареулишвили Нина Владимировна. Изучение реакций образования гидроокисей некоторых металлов при помощи методов физико-химического анализа. 1953. 146 с., 41 рис. (Инст. химии АН Груз. ССР).

Защ. 1954, 23.1.

866. Наврузли Идиат Мосом Оглы. Определение углеводородов в г. Баку и его районов. 1938.

Защ. 1938, 20.5.

867. Отен Александр Фердинандович. Эквивалентная форма выражения констант масел и жиров. 1937.

Защ. 1938, 29.1.

868. Петрова Фаина Сергеевна. К кинетике фотохимической реакции водорода (Хим. инст. Груз. филиала Акад. Наук СССР). 1939. 74 с., илл., диагр.

Защ. 1939, 23.5.

869. Резникова Софья Борисовна. Прогорание эрлихского масла и методы определения прогорклости в эрлихе. М. 1945. 212,,15 с.

Защ. 1947, 18.3.

870. Хускивадзе Александр Несторович. Получение двух основных кислот из нефтяных погонов. Агд. 1940. 85 с. (Пединститут им. Герцена)

Защ. 1940, 27.9.

871. Хукия Валериан Леванович. К вопросу об определении малых количеств йодидов и бромидов. 1937. 75 с., 17 табл., Зсп. Тр. ТГУ, 1941 и 1942 гг.).

Защ. 1939, 31.12.

872. Цицадзе Ананий Павлович. Синтез гексо-сахарной кислоты из ксилозы.

Защ. 1948, 15.11.

873. Цецхладзе Тея Владимировна. К вопросу об устойчивости алюмосуспензий, полученных механическим диспергированием свинца. 1945. 132 с., 22 табл. (Тр. ТГУ, т. 33а, 1949).

Защ. 1945, 27.12.

874. Чрелашвили София Николаевна. К вопросу о комбинированном действии катализатора и излучений. 97 с., [6] Вкл. л., рис. (Хим. инст. Груз. фил. Акад. наук СССР).

Защ. 1938, 14.5.

875. Чкеникая Аркадий Захарьевич. Кристаллы — аквогидраты мангано-хлорида. Экспериментальное исследование. 1939—1940. [1], 108 с., 10 вкл. л.

Защ. 1940, 29.6.

876. Эристави Димитрий Иосифович. Влияние излучений на активность катализатора. 1937. 68 с., илл. (Инст. химии ГФАН СССР).

Защ. 1937, 7.2

Dissertation for degree of
Candidate Chemical Sciences

Def. at
Tbilisi State U.

KHUSKIVADZE, G.A.

Conjugate functions and Cauchy type integrals. Soob. AN Gruz. SSR 32 no.2:257-263 '63. (MIRA 18:1)

1. Tbilisskiy matematicheskiy institut imeni A.M.Razmadze AN Gruzinskoy SSR. Submitted May 16, 1962.

29812
S/020/61/140/006/006/030
C111/C444

16.3000 16.4500

AUTHOR: Khuskivadze, G. A.

TITLE: Conjugate functions and Cauchy's singular integrals

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 6, 1961, 1270-1273

TEXT: Let E be the linear family of functions, given on $[0, 2\pi]$ and containing all summable functions f(x) and its conjugate functions

$$\bar{f}(x) = -\frac{1}{\pi}\int_0^{2\pi} f(t)\,\frac{1}{2}\operatorname{ctg}\frac{1}{2}(t-x)\,dt, \quad 0 \leq x \leq 2\pi .$$

Let Φ be an arbitrary linear functional, being defined on E and satisfying the following condition:

If $f \in L(0, 2\pi)$, then

$$\Phi(f) = \int_1^{2\pi} f\,dx; \quad \Phi(\bar{f}) = 0.$$

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The number $\Phi(f)$ is called the Φ-integral of $f \in E$, in symbols

$$\Phi(\overline{f}) = (\Phi) \int_0^{2\pi} f \, dx.$$

Special cases of the Φ- integrals are e. g. the A-integrals see E. C. Titchmarsh (Ref. 1: Proc. London Math. Soc., 29, 49 (1929), B-integrals see A. Kolmogoroff (Ref. 3: Fund. Math., 11, 27 (1928). Theorem 1: Let $f \in L(0, 2\pi)$. The 2π- periodic function φ satisfies the Dini-condition: $\omega(\delta; \varphi)\delta^{-1} \in L(0, 2\pi)$, where $\omega(\delta; \varphi)$ is the modulus of continuity of φ. Then $\varphi f = f_1 + f_2$, where $f_1, f_2 \in L(0, 2\pi)$ and

$$(\Phi) \int_0^{2\pi} \varphi(x) \overline{f}(x) \, dx = - \int_0^{2\pi} \overline{\varphi}(x) f(x) \, dx \qquad (1)$$

(if the sign (Φ) is missing in front of the integral, the Lebesgue integral is meant).

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Conclusion 1: The series conjugate with the Fourier series for $f \in L(0, 2\pi)$ is the Fourier series of $\bar{f}$ in the sense of the ϕ - integral.

Conclusion 2: If $f \in L(0, 2\pi)$ and $u(r, \vartheta)$ is its Poisson integral, then the function $u(r, \vartheta)$ harmonic conjugate with $v(r, \vartheta)$, is representable as Poisson ϕ-integral:

$$v(r, \vartheta) = \frac{1}{2\pi} (\phi) \int_0^{2\pi} \bar{f}(t) \frac{1 - r^2}{1 - 2r \cos(t - \vartheta) + r^2} dt.$$

Let Γ be a rectificable Jordan curve in the complex plane. Let $t = t(s)$, $0 \leq s \leq \gamma$ be the equation of Γ, s the arc abscisso, γ the length of Γ. Γ is called a D-curve, if $t'(s)$ satisfies the Dini-condition.

Lemma: If Γ is a simple closed D-curve of length 2π and $f(t) \in L(\Gamma)$, then for almost all $s_0 \in [0, 2\pi]$

$$\lim_{\epsilon \to 0} \left(\int_0^{s_0 - \epsilon} + \int_{s_0 + \epsilon}^{2\pi} \right) \frac{f[t(s)]t'(s)}{t(s) - t(s_0)} ds =$$

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Conjugate functions and Cauchy's . . .

$$= \int_0^{2\pi} f[t(s)] \frac{1}{2} \operatorname{ctg} \frac{1}{2}(s-s_0)\, ds + \int_0^{2\pi} f[t(s)] K(s,s_0)\, ds, \qquad (2)$$

where the function

$$K(s,s_0) \equiv f[t(s)] \left[\frac{t'(s)}{t(s) - t(s_0)} - \frac{1}{2} \operatorname{ctg} \frac{1}{2}(s - s_0) \right]$$

is summable on the square $[0, 2\pi; 0, 2\pi]$.

From this lemma follows that in case Γ is a D-curve and $f(t) \in L(\Gamma)$ the function

$$S(f; t_0) = \frac{1}{\pi i} \int_\Gamma \frac{f(t)dt}{t - t_0}$$

is defined for almost all $t_0 \in \Gamma$, where the integral is understood in the sense of the Cauchy principal value.

For complex functions, given on Γ, the conception of ϕ - integral is introduced as well as by P. L. Ul'yanov (Ref. 6: DAN, 112, no.3, 385 (1957)) it is done in the case of the A-integral. Let $E(\Gamma)$ be the

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Conjugate functions and Cauchy's . . . .

class of functions, Φ-integrable on Γ.

Theorem 2: Let Γ be a finite set of simple closed D-curves which do not touch each other; $f(t) \in L(\Gamma)$; $\varphi(t)$ satisfies the Dini-condition. Then $\varphi(t)\, S(f;t) = f_1(t) + S(f_2; t)$, where $f_1(t)$, $f_2(t) \in L(\Gamma)$; $\varphi(t)\, S(f;t) \in E(\Gamma)$ and

$$(\Phi) \int_\Gamma \varphi(t)\, S(f;t)\, dt = - \int_\Gamma S(\varphi; t)\, f(t)\, dt.$$

Considered is the integral of the Cauchy-Lebesgue type

$$F(z) = \frac{1}{2\pi i} \int_\Gamma \frac{f(t)dt}{t-z}, \quad z \bar{\in} \Gamma$$

where Γ is a D-curve, $f(t) \in L(\Gamma)$.

Theorem 3: Let Γ satisfy the suppositions of theorem 2 and be the boundary of a connected domain G. Then an analytic function F(z),

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Conjugate functions and Cauchy's . . .

being representable in G by an integral of the Cauchy-Lebesgue type, is also representable by a Cauchy Φ-integral.

The author mentions Kolmogorov, Lyapunov, J. J. Privalov, P.L.Ul'yanov and V. J. Smirnov.

There are 6 Soviet-bloc references and 3 non-Soviet-bloc references. The reference to English-language publication read as follows: E. C. Titchmarsh (Ref.1).

ASSOCIATION: Tbilisskiy matematicheskiy institut im. A. M. Razmadze Akademii nauk Gruz SSR (Tbilisi Institute of Mathematics im. A. M. Razmadze of the Academy of Sciences Gruzinskaya SSR)

PRESENTED: May 31, 1961, by N. J. Muskhelishvili, Academician

SUBMITTED: May 29, 1961

Card 6/6

KHUSKIVADZE, B.K. (Moskva)

Technic for the quantitative determination of aldosterone in urine. Probl.endok.i gorm. no.1:57-63 '62. (MIRA 15:8)

1. Iz laboratorii biokhimii gormonov i gormonal'noy regulyatsii protsessov obmena (zav. - prof. N.A. Yudayev) Instituta biologicheskoy i meditsinskoy khimii AMN SSSR.
(ALDOSTERONE) (URINE—ANALYSIS AND PATHOLOGY)

KHUSKIVADZE, G.A.

A-integrals of the Cauchy type. Soob. AN Gruz. SSR 27 no.6:663-670 D '61. (MIRA 15:2)

1. Tbilisskiy matematicheskiy institut im. A.M.Razmadze AN Gruzinskoy SSR. Predstavleno akademikom N.P.Vekua.
(Integrals)
(Functions, Analytic)

MIKISHVADZE, Z. V.

"The Problem of the Therapy of Deep Forms of Pyodermitis With Staphylopha; (Clinical and Experimental Investigation)." Cand Med Sci, Tbilisi State Medical Inst, Tbilisi, 1954. (KL, No 10, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

BARANOVSKIY, G.Ya., mayor med. sluzhby; KHUSNITDINOV, A., leytenant med. sluzhby

Ampule for blood transfusion. Voen. med. zhur. no.1:83-84 Ja '57 (MIRA 12:7)
(BLOOD TRANSFUSION, apparatus and instruments, ampule (Rus))

BELYAYEV, N.V., podpolkovnik med.sluzhby, kand.med.nauk;
KHUSNITDINOV, A., kapitan med.sluzhby

Erecting 3 tents (USB AND UST) into a single 3-section unit. (MIRA 15:5)
Voen.-med.zhur. no.10:82-84 O '61.
(HOSPITALS, MILITARY)

KHUSNITDINOV, S., assistent

Effect of the tightening of disks on the rigidity of shafts and the determination of the axial force of tightening. Sbor.nauch.-issl. rab. TTI no.9:133-144 '60. (MIRA 15:6)
(Shafting)

KHUSNITDINOV, S.

Torsional vibrations of the saw shaft of gin saws. Sbor.nauch.-issl.rab.TTI no.12:95-100 '61. (MIRA 15:11)
(Cotton machinery--Vibration)

137-58-6-11837

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 93 (USSR)

AUTHORS: Tsekhanskiy, M.I., Shishkina, N.I., Khusnoyarov, K.B.

TITLE: Changes in the Radioactivity of Nonmetallic Inclusions in Steel Upon Electrolysis (Izmeneniye radioaktivnosti nemetallicheskikh vklyucheniy v stali pri elektrolize)

PERIODICAL: Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chernykh metallov, 1957, Nr 3, pp 102-108

ABSTRACT: Isotope Ca^{45} was introduced into runner brick during the pouring of 500-kg ingots of rimmed steel. Specimens to be used for separation of nonmetallic inclusions (NI) by the electrolytic method were selected from strip 32-mm thick, and decomposition of the carbides in the NI precipitate was done with the aid of $KMnO_4$ and ammonium persulfate. Preliminary investigation of the ratio of active refractory to various oxidizing reactants revealed the absence of change in the activity and weight of the refractory upon treatment with these reactants. It was established that the amount of NI resulting from destruction of the refractories does not exceed 2.8%, while 46% of all the samples measured had zero activity. Measurement of the

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Changes in the Radioactivity (cont.)

activity of the NI before and after separation from the metal, and also measurement of the activity of NI mechanically separated from steel and of slags having compositions close to those of the NI (the measurement being done before and after treatment by various electrolytes) showed that the refractory does not lose its activity in the process of electrolyte treatment, while the products of its reaction with molten metal are destroyed and lose their activity, reduction in the activity of the slags under these conditions being from 519 to 421-90 impulses per min. Further treatment with electrolytes and reactants to destroy the carbides of slags taken from the surface of the metal in the mold confirmed the results obtained and showed that the loss of weight by the slag, attaining 9-18%, occurs primarily during the process of electrolysis. Bibliography: 8 references.

A.Sh.

1. Steel--Production 2. Steel--Impurities 3. Carbides--Decomposition
4. Electrolysis--Applications 5. Refractory materials--Chemical reactions
6. Steel--Chemical reactions 7. Calcium isotopes (Radioactive)--Applications

Card 2/2

AUTHORS: Tselikhanskiy, M.I., Shishkina, N.I., Knusnoyarov, K.B. 32-12-20/71

TITLE: The Investigation of the Radioactivity of Non-Metallic Impurities in Steel During Electrolysis (Izucheniye radioaktivnosti nemetallichskikh vklyucheniy v stali pri elektrolize).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1440-1442 (USSR)

ABSTRACT: The present paper discusses the possibility of determining impurities in the steel melt during the work of casting by means of radioactive isotopes. For this purpose the radioactive isotope Ca^{45} was introduced into the refractory material of foundry equipments. From the cast metal block samples were taken at various places after rolling, which were investigated electrolytically as to their content of non-metallic impurities. In the same manner also the samples were taken of the radioactivated refractory material of the foundry system. It was found in this connection that, after a number of casting processes, the radioactivity of the refractory material remained unchanged, and that the non-metallic impurities of the cast metal, which were precipitated in the metal solution, showed hardly any radioactivity after electrolysis. A slight radioactivity of 1-1.6% could in this case be explained by the wear (destruction of the surface) of the radioactivated refractory material. In the same manner

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the film (slag) forming on the boiling metal was investigated. From the table of results it may be seen that the slags, which were specially radioactivated, passed into the solution with electrolysis and lost 20% of their radioactivity; otherwise, slags behaved in the same manner as the non-metallic impurities in the metal. The conclusion is drawn that, as may be seen from the present paper, the application of the Ca-isotope is unsuited as indicator for non-metallic impurities in metal. Statements hitherto made in publications to the effect that non-metallic impurities detectable in cast metal are only in a small degree due to the wear products of the refractory materials of foundry plants found no confirmation. There are 3 tables and 8 Slavic references.

ASSOCIATION: Ural'sk Scientific Research Institute for Iron Metallurgy (Ural'skiy nauchno-issledovatel'skiy institut chernoy metallurgii).

AVAILABLE: Library of Congress

Card 2/2 1. Steel-Impurites-Determination 2. Electrolytic investigations 3. Radioactive isotopes-Applications

Khusnoyarov, K. B.

AUTHORS: Tsekhanskiy, M. I., Khusnoyarov, K. B., Susloparov, G. D. 131-2-7/10

TITLE: The Determination of the Role of Refractory Materials in the Occlusion of Rimmed Steel by Non-Metallic Inclusions (Opredeleniye roli ogneuporov v zagryaznenii kipyashchey stali nemetallicheskimi vklyucheniyami).

PERIODICAL: Ogneupory, 1958, Nr 2, pp. 82-87 (USSR)

ABSTRACT: In this investigation participated I. A. Ol'khovskiy and M. I. Diyesperova: Rimmed steel was cast, using pan- and siphon tiles containing the radioactive calcium isotope Ca^{45}. The refractory products were produced from the basic and semi-acid clay from the source of Nizhne-Uvel'sk and Chasov-Yarskiy. The experimental smeltings were conducted according to the usual regulations of the plant and cast into ingot moulds by means of the siphon method, the weight of the blocks amounting to 500-520 kg. Experimental samples were taken of the metal and of the slag from the pan as well as from the surface of the rimmed steel in the ingot moulds. These samples were investigated chemically and their radioactivity was measured. The content of refractory material in the slag crust, taken from the surface of the rimmed steel in the ingot

Card 1/3

moulds is given in table 1, as well as the radioactivity of the slag samples from the casting pan. It can be seen from the data in table 1, that the content of refractory material, which may be interpreted as a result of the destruction of the pan casing and of the mortar, does not exceed from 2 to 3 %. Table 1 contains data on the dependence of the degree of destruction of the pan stones on the content of MnO in the slag. Table 2 gives the influence of the siphon stones on the contamination of the steel, the siphon stones originating from the clay of the source Chasov-Yarskiy, as well as from Nizhne-Uvel'sk. At the investigation of the entire siphon system the content of refractory material in the slag amounted to from 18'3 to 21'6 %. Additionally, it may be seen from table 2, that the clays from both sources show no essential differences. In tables 2, 3, 4 and 5 the contamination of the blocks by refractory materials is given and subsequently described in detail. All products from the experimental metal were scrutinized closely and examined. The output od defective products caused by the utilization of refractory materials

is given in table 3, on which occasion it appeared, that the output of defective products due to refractory material from the source of Nizhne-Uvel'sk is almost half the amount of that of the source of Chasov ' Yarskiy (table 4). There are 6 figures, 4 tables, and 4 of which are Slavic.

ASSOCIATION: Institute of Ferrous Metals, Ural (Ural'skiy institut chernykh metallov).

AVAILABLE: Library of Congress

TSEKHANSKIY, M.I., kand.tekhn.nauk; SHISHKINA, N.I., kand.khimicheskikh nauk; Prinimali uchastiye: KHUSNOYAROV, K.B.; KAREL'SKAYA, T.A.

Radiometric study of the effect of refractories on the presence of nonmetallic inclusions in steel. Stal' 22 no.1:66-67 Ja '62. (MIRA 14:12)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.
(Steel--Defects)
(Radioisotopes--Industrial applications)

SYREYSHCHIKOVA, V.I.; LEVITIN, V.V.; BLYUM, E.E.; KHUSNOYAROV, K.B.

Effect of the methods of smelting and heat treatment on the heat resistant properties of boiler pipe of 12Kh1MF and 15Kh1M1F steel. Stal' 25 no.4:351-354 Ap '65.
(MIRA 18:11)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.

KHUSNULLIN, R.G.

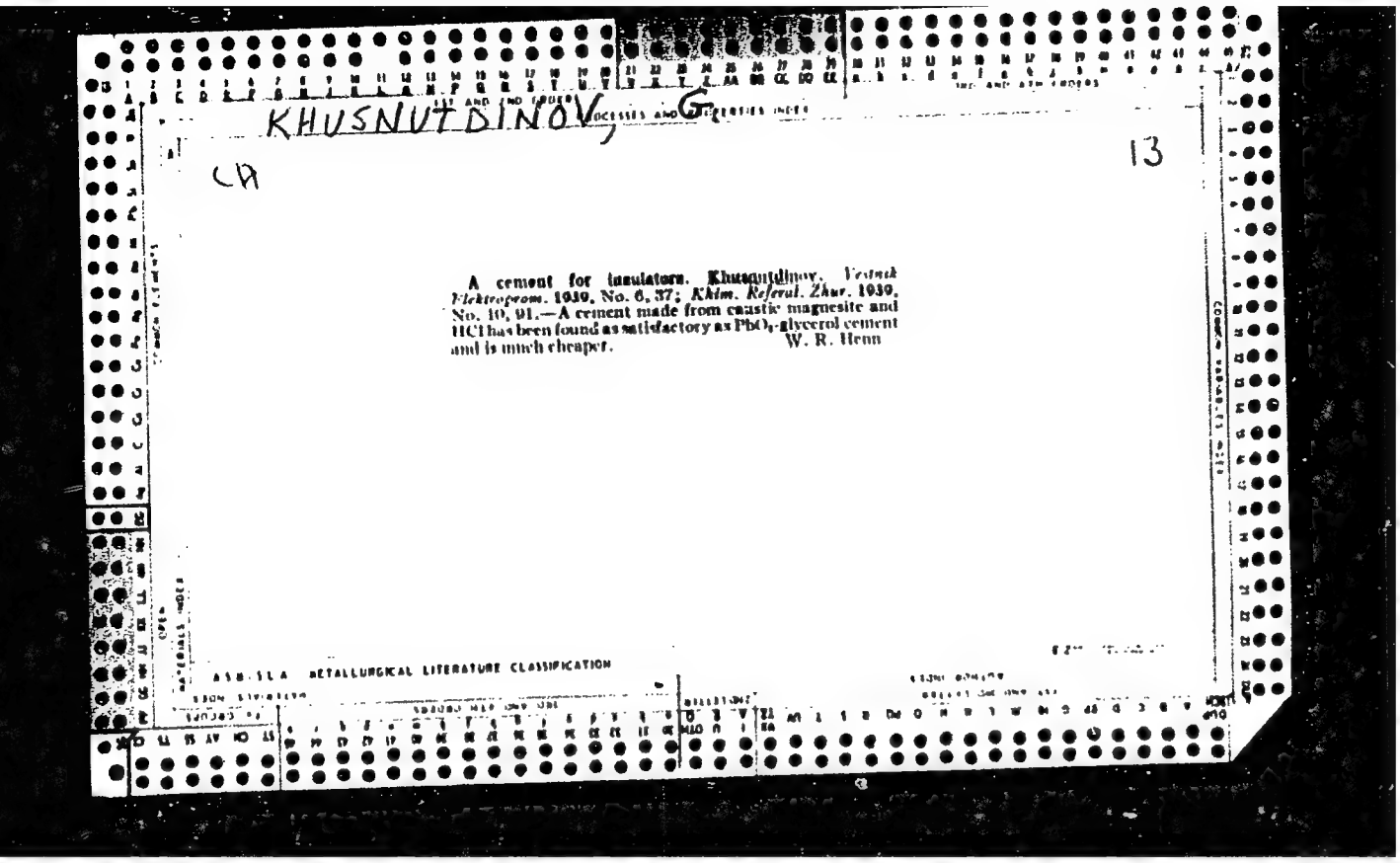
We are members of the Communist Youth League. Put' i put.khoz. 5 no.11:19 N '61. (MIRA 14:12)

1. Sekretar' komsomol'skoy organizatsii putevoy mashinnoy stantsii No.49, st. Kamarchaga, Vostochno-Sibirskogo dorogi.
(Railroads--Maintenance and repair)
(Communist youth league)

KHUSNUTDINOV, D.

KHUSNUTDINOV, D.

Budget of a district. Fin.SSSR 17 no.6:55-56 Je '56. (MLRA 9:9)
(Sabinskiy District--Budget)



KHUSNUTDINOV, G

CA

13

A cement for insulators. Khusnutdinov. *Vestnik Elektroprom.* 1939, No. 6, 37; *Khim. Referat. Zhur.* 1939, No. 10, 91.—A cement made from caustic magnesite and HCl has been found as satisfactory as PbO_2-glycerol cement and is much cheaper. W. R. Henn

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION

BEKUROV, E., brigadir; PEDALEV, V.; PROSHKIN, I.; KHUSNUTDINOV, G.; VASIN, M.;

Making a heat-insulating material using clay and straw. Sel'.stroi. 13 no.2:28 F '59. (MIRA 12:3)

1. Stroitel'naya brigada kolkhoza imeni Karla Marksa, Khasavyurtovskogo rayona, Dagestanskoy ASSR (for Bekurov). 2. Nachal'nik rayonnogo otdela po stroitel'stvu v kolkhozakh Neverkinskogo rayona Penzenskoy oblasti (for Pedalev). 3. Nachal'nik rayonnogo otdela po stroitel'stvu v kolkhozakh Pronskogo rayona Ryazanskoy oblasti (for Proshkin). 4. Nachal'nik Khorezmskogo oblastnogo upravleniya po stroitel'stvu v kolkhozakh Uzbekskoy SSR. (for Khusnutdinov). 5. Nachal'nik otdela po stroitel'stvu v kolkhozakh Slobodo-Turinskogo rayona Sverdlovskoy oblasti (for Vasin).
(Farm buildings)

KHUSNUTDINOV, M.Kh.

Constructing a radial water intake. Stroit. truboprov. 10 no.2:
20-22 F '65. (MIRA 18:5)

1. Trest Tatspetsstroy, Bugul'ma.

L 40691-65

ACCESSION NR: AP5012309 UR/0095/64/000/011/0022/0024

AUTHOR: Khusnutdinov, M. Kh.

TITLE: Second stage of the Kamskiy(Naberezhnyye Chelny - Bugul'ma) water pipeline

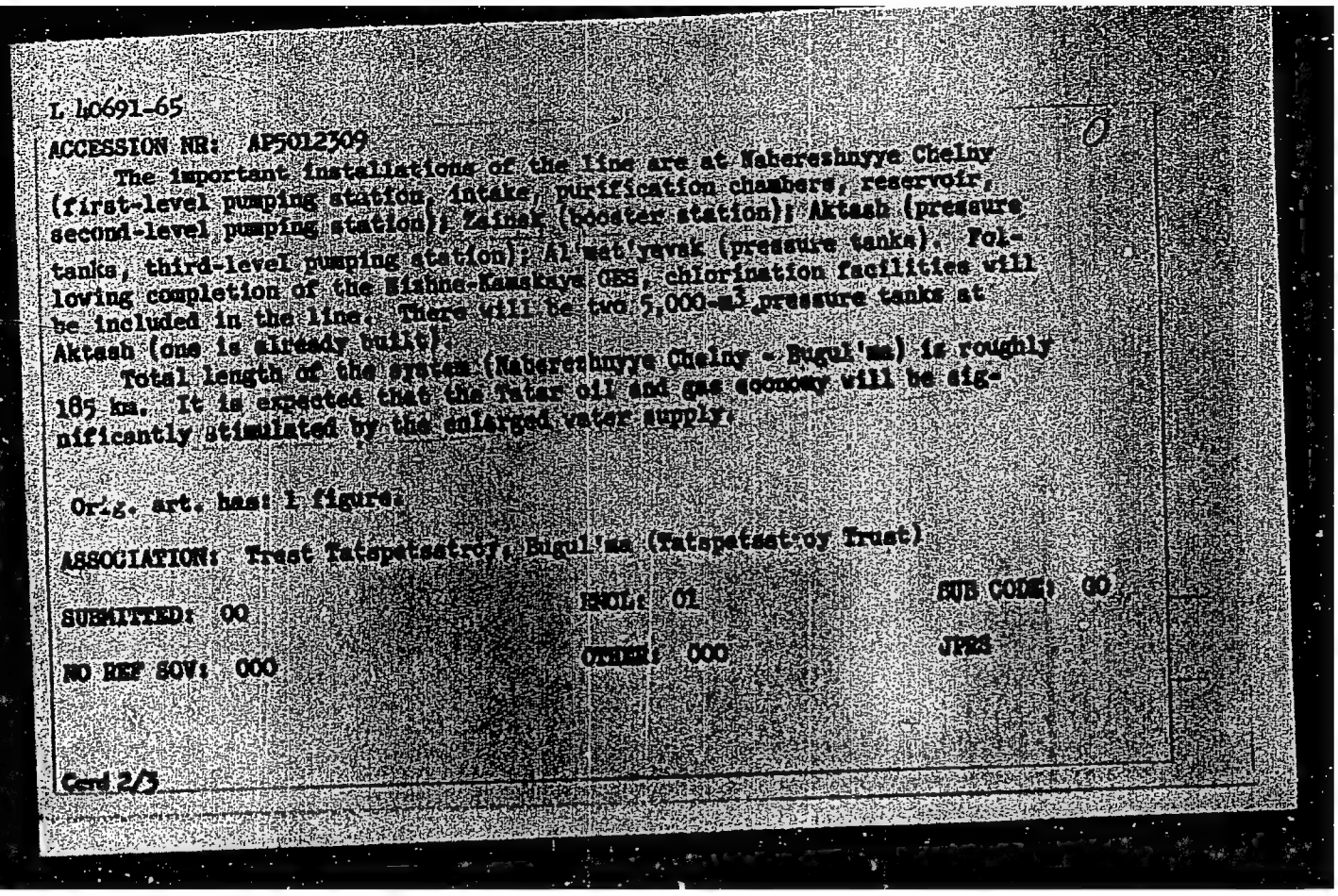
SOURCE: Stroitel'stvo truboprovodov, no. 11, 1964, 22-24

TOPIC TAGS: pipeline transportation system, water sanitation

ABSTRACT: The Kamskiy water pipeline, opened in 1962, was built to supply industrial and domestic water to the gas and oil fields in the Tatarskaya ASSR. This first stage of the project supplies 96,000 m^3 of water daily. A second conduit is being laid which will bring the capacity of the system up to 160,000 m^3 of water daily; the lines and main installations can be completed within one year.

The 92-km section between the second- and third-level pumping stations will be of 1,220-mm pipe; between the third-level station and the Al'met-yevsk group of installations, 720-mm pipe will be used; from here to Leninogorsk, 529-mm pipe; and from Leninogorsk to Bugul'ma (entirely new portion of the system), 426-mm pipe.

Card 1/3



L 40691-65

ACCESSION NR: AP5012309

The important installations of the line are at Naberezhnyye Chelny (first-level pumping station, intake, purification chambers, reservoir, second-level pumping station); Zainsk (booster station); Aktash (pressure tanks, third-level pumping station); Al'met'yevsk (pressure tanks). Following completion of the Bishne-Kamskaye GRES, chlorination facilities will be included in the line. There will be two 5,000-m³ pressure tanks at Aktash (one is already built).

Total length of the system (Naberezhnyye Chelny - Bugul'ma) is roughly 185 km. It is expected that the Tatar oil and gas economy will be significantly stimulated by the enlarged water supply.

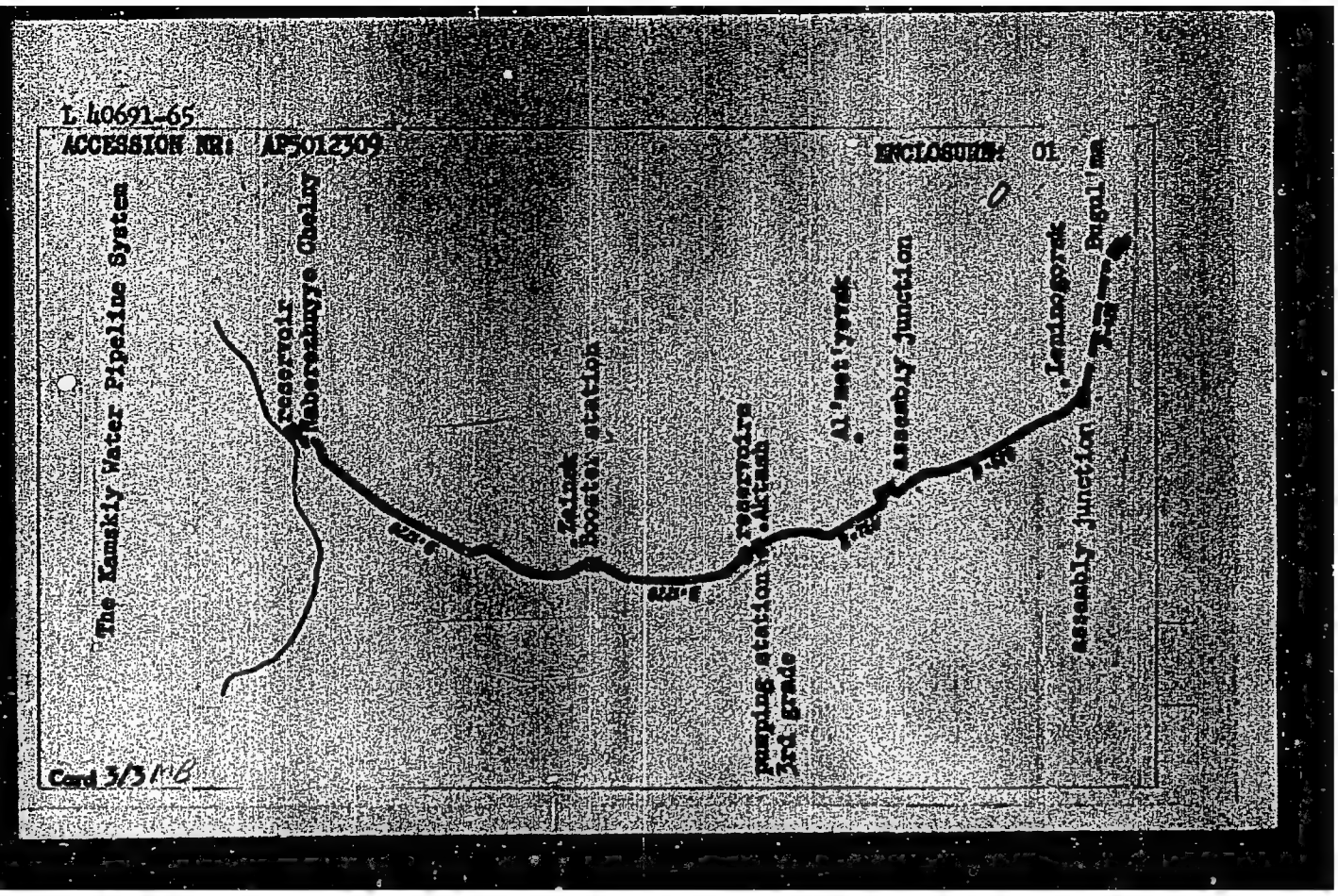
Orig. art. has: 1 figure.

ASSOCIATION: Trest Tatspetsstroy, Bugul'ma (Tatspetsstroy Trust)

SUBMITTED: 00 ENCL: 01 SUB CODE: GO

NO REF SOV: 000 OTHER: 000 JPRS

Card 2/3



APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000722420016-7"

LOBANOV, Ye.M.; KHUSNUTDINOV, R.I.

Determination of irridium in copper and nickel slimes and in platinum concentrates by the method of neutron activation analysis with the aid of coincidence spectrometry. Izv. AN Uz. SSR. Ser.fiz.-mat. nauk 9 no.6:72-76 '65.

(MIRA 19:1)

1. Institut yadernoy fiziki AN UzSSR. Submitted Dec. 14, 1964.

L 31303-65 EWT(d) Pg-4 IJP(c)

ACCESSION NR: AR5004803 S/0044/64/000/011/B066/B066

SOURCE: Ref. zh. Matematika, Abs. 11B299

AUTHOR: Khusnutdinov, R. Sh.

TITLE: On the analytic continuability of solutions of one class of nonlinear integrodifferential equations

CITED SOURCE: Sb. aspirantsk. rabot. Kazansk. un-t. Matem., mekhan., fiz. Kazan', 1964, 97-104

TOPIC TAGS: integrodifferential equation, analytic continuation, eigenvalue

TRANSLATION: The Nekrasov-Nazarov method is used to investigate the question of the continuability of the solution of the Cauchy problem for the integro-differential equation

Card 1/2

L 31303-65

ACCESSION NR: AR5004803

$$g(x; u(x), u'(x), \ldots, u^{(n)}(x)) = \lambda \int_0^x f(x, t, u(t), u'(t), \ldots, u^{(m)}(t))\,dt,$$

It is assumed that when $\lambda = \lambda_0$ the equation has a solution, the functions f and g are analytic with respect to their arguments in the vicinity of the solution, and the partial derivatives of any order of the functions f and g are uniformly bounded. It is proved that if λ_0 is not an eigenvalue of the auxiliary integral equation, then the value $\lambda = \lambda_0$ is a point of unique analytic continuability of the solution. Yu. Lando.

SUB CODE: MA ENCL: 00

Card 2/2

GABRIYELYANTS, G.A.; BLISKAVKA, A.G.; MOROZOV, G.I.; KHUSNUTDINOV, Z.B.; KHADZHINUROV, N.; KOLODIY, V.V.

Zeagli-Darvaza gas field. Geol. nefti i gaza 6 no.11:28-30 N '62. (MIRA 15:12)

1. Upravleniye geologii i okhrany nedr pri Sovete Ministrov Turkmenskoy SSR i Turkmenskiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.

NAGORNYY, A.I.; KHUSNUTDINOV, Z.D.

Use of slags from the Balkhash copper works to obtain slag "wadding" and "pumice". Trudy Kazakh. fil. Asia no.2:115-124 '60. (MIRA 15:12)
(Kazakhstan--Lightweight concrete)

GRITSEV, N.D.; KHUSNUTDINOVA, G.G.; GALEYEVA, K.G.

Combination gas in Bashkirian Sakmara-Artinskian reef sediments.
Trudy UfNII no.4:111-126 '59. (MIRA 12:8)
(Bashkiria--Gas, Natural)

S/081/62/000/013/043/054
B156/B101

AUTHOR: Khusnutdinova, G. G.

TITLE: Composition of by-product petroleum gas from the Arlanskoye oilfield, and amounts available

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1962, 533, abstract 13M198 (Novosti neft. i gaz. tekhn. Gaz. delo, no. 7, 1961, 3-5)

TEXT: Investigations of by-product gases (BG) from the Arlanskoye oilfield have resulted in determining the composition of these gases, also the gas factor and potential contents of light hydrocarbons in traprock gases and petroleums. It has been found that BG have high contents of nitrogen (46.5 % by vol.), propane and butanes (520 g/m^3), pentanes, and higher molecular hydrocarbons (141 g/m^3), and that the calorific values of the gases are 10,000 kcal/m^3. The amount of BG produced from 1000 tons of petroleum is 22.8-33.8 tons. Most of the gases of value to the petrochemical industry, including propane, butanes and pentanes which make up

Card 1/2

S/081/62/000/013/043/054
Composition of by-product... B156/B101

67-80 % of the total amount of gases, are contained in the traprock petroleums, and less therefore in the traprock gases. It is recommended that as regards by-product gases from this oilfield the separation of the light benzine fraction from gasoline should be organized. [Abstracter's note: Complete translation.]

Card 2/2

34582

16.3500 S/044/62/000/001/028/061
C111/C444

AUTHOR: Khusnutdinova, N. N.

TITLE: On the behavior of the solutions of the Cauchy problem for a quasilinear equation of the parabolic type for unbounded increase of time

PERIODICAL: Referativnyy zhurnal, Matematika, no. 1, 1962, 48, 49, abstract 1B233. ("Tr. Kazansk. aviats. in-ta," 1960, vyp. 61, 23-28)

TEXT: In the semi plane $R\{t \geq 0, -\infty < x < \infty\}$ the Cauchy problem

$$\frac{\partial \varphi(u)}{\partial t} = \frac{\partial^2 u}{\partial x^2} \qquad (1)$$

$$u(0,x) = u_u(x), \; -\infty < x < \infty, \qquad (2)$$

$$\varphi'(u) \geq \beta > 0$$

is set up, and the behavior of the solutions for $t \to \infty$ is investigated. One supposes: 1.) $u_0(x)$ together with derivatives u_0', u_0'', is bounded

Card 1/4

and possesses a third derivative in every finite x-interval which satisfies the Lipschitz condition; 2.) φ', φ'', φ''' are bounded for $|u| \leq |\max u_0(x)|$; 3.) $\varphi'(u)$ has a continuous fourth derivative which satisfies the Lipschitz condition. Some theorems on the solution of (1), (2) are proved.

We give several theorems.

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Theorem 2: Let $u(t,x)$ be the solution of (1), (2),

$$\lim_{x \to 0} u_0(x) = u_+, \quad \lim_{x \to -0} u_0(x) = u_-,$$

$u_- \leq u_0(x) \leq u_+$ if $u_- < u_+$, $u_+ \leq u_0(x) \leq u_-$, if $u_+ < u_-$. Then

$\left| u(t,x) - \tilde{u}\left(\frac{x}{\sqrt{t+1}}\right) \right| \to 0$ uniformly with respect to x, $-\infty < x < \infty$ for $t \to \infty$, where $u\left(\frac{x}{\sqrt{t+1}}\right)$ is the unique solution of (1) which depends only on $\frac{x}{\sqrt{t+1}}$ and satisfies the conditions

Card 2/4

On the behavior of the solutions ...

$$\underset{x \to +\infty}{\tilde{u}(x)} \to u_+, \quad \underset{x \to -\infty}{\tilde{u}(x)} \to u_- .$$

If the initial function in addition to this satisfies the condition

$$\tilde{u}(x-N) \leq u_0(x) \leq \tilde{u}(x+N),$$

for a certain constant $N > 0$ ($u_- < u_+$), then the estimation

$$\left| u(t,x) - \tilde{u}\left(\frac{x}{\sqrt{t+1}} \right) \right| \leq K_1 \frac{2N_1}{\sqrt{t+1}} ,$$

holds, where $K_1 > 0$, $N_1 \geq N$.

Theorem 4: Let $u(t,x)$ be the solution of (1), (2), and let

$$\lim_{x \to \infty} u_0(x) = u_+, \quad \lim_{x \to -\infty} u_0(x) = u_- .$$

Then $\left| u(t,x) - \tilde{u}\left(\frac{x}{\sqrt{t+1}} \right) \right| \to 0$ uniformly with respect to x for $t \to \infty$,

Card 3/4

On the behavior of the solutions ...

where $\tilde{u}\left(\frac{x}{\sqrt{t+1}}\right)$ is the unique solution of (1), only depending on $\frac{x}{\sqrt{t+1}}$ and satisfying the conditions

$$\lim_{x \to \infty} \tilde{u}_0(x) = u_+, \quad \lim_{x \to -\infty} \tilde{u}(x) = u_-.$$

[Abstracter's note: Complete translation.]

Card 4/4

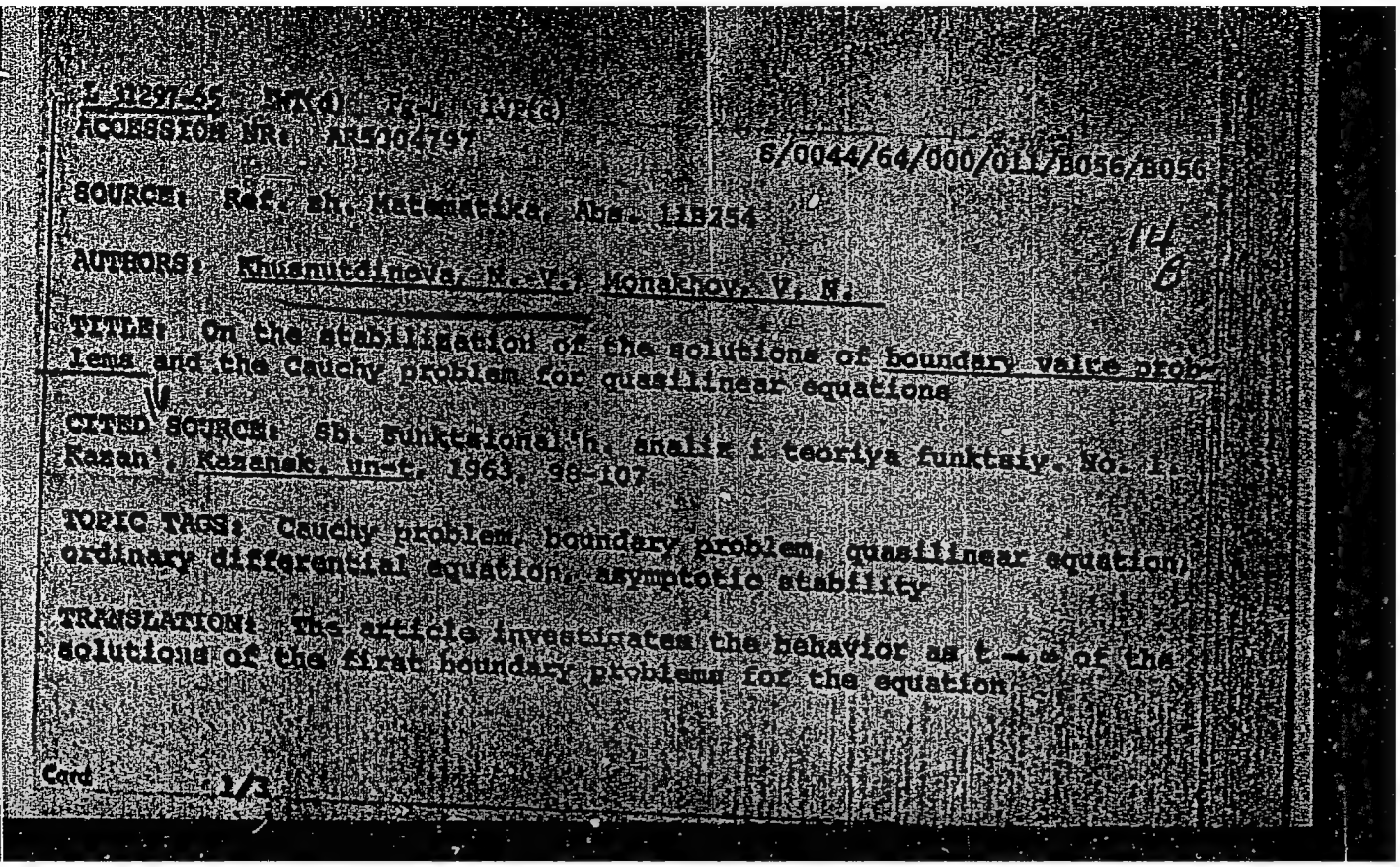
KHUSNUTDINOVA, N. V., Cand Phys-Math Sci --"On the behavior of solutions of marginal problems and ~~of~~ the Koshi problem for an equations of single-dimensional non-stationary filtration under ~~at~~ limitless growth of time ~~growth~~." Kazan', 1961. (Min of Higher and Sec Spec Ed RSFSR. Kazan' Order of Labor Red Banner State U im V. I. Ul'yanov-Lenin) (KL, 8-61, 229)

KHUSNUTDINOVA, N.V.

Behavior of the solutions of boundary-value problems and of the Cauchy problem for a nonstationary filtration-type equation in case of an unrestricted time increase. Trudy KAI no.64:47-63 '61.
(MIRA 17:2)

MONAKHOV, V.N.; KHUSNUTDINOVA, N.V.

Some boundary properties of harmonic and parabolic functions.
Trudy KAI no.71:106-132 '62. (MIRA 18:5)



L 31297-65 EWT(d) Pz-1 IJP(c)
ACCESSION NR: AR5004797 S/0044/64/000/011/B056/B056

SOURCE: Ref. zh. Matematika. Abs. 11B254

AUTHORS: Khusnutdinova, M. V.; Monakhov, V. N.

TITLE: On the stabilization of the solutions of boundary value problems and the Cauchy problem for quasilinear equations

CITED SOURCE: Sb. funktsional'n. analiz i teoriya funktsiy. No. 1. Kazan', Kazanek. un-t, 1963, 98-107

TOPIC TAGS: Cauchy problem, boundary problem, quasilinear equation, ordinary differential equation, asymptotic stability

TRANSLATION: The article investigates the behavior as $t \to \infty$ of the solutions of the first boundary problems for the equation

Card 1/3

L 31297-65

ACCESSION NR: AR5004757

$$\frac{\partial u}{\partial t} - A(t, x, u)\frac{\partial^2 u}{\partial x^2} - B(t, x, u)\frac{\partial u}{\partial x} - C(t, x, u) = 0$$

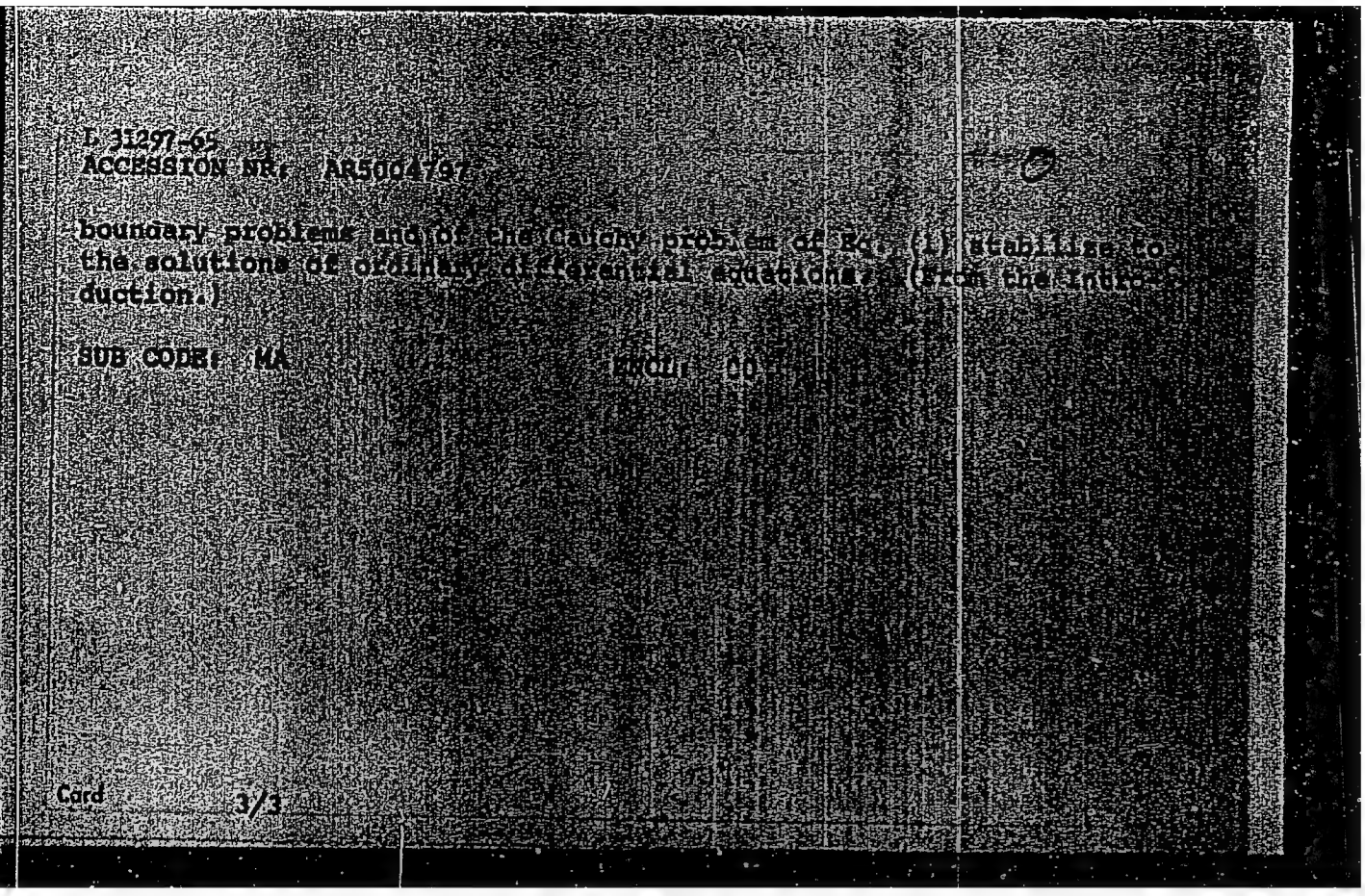
$$(A(t, x, u) \geq \alpha > 0,\ A(t, x, u) \leq 0,\ C(t, x, u) \geq 0) \qquad (1)$$

with conditions $u(0, x) = u_0(x)$, $u(t, 0) = u_1(t)$, $u(t, x) = u_2(t)$ in the region $P\{t \geq 0,\ 0 \leq x \leq x\}$, of the first boundary value problem for Eq. (1) with conditions $u(0, x) = u_0(x)$, $u(t, 0) = u_1(t)$ in the region $R\{t \geq 0,\ 0 \leq x < \infty\}$, and of the Cauchy problem with initial condition $u(0, x) = u_0(x)$ in the region $Q\{t \geq 0,\ -\infty < x < \infty\}$.

The coefficients $A(t, x, u)$, $B(t, x, u)$, $C(t, x, u)$ and also the initial and boundary-value functions $u_0(x)$ and $u_1(t)$ $(i = 1, 2)$ satisfy the smoothness conditions, ensuring the existence and uniqueness of the solutions of these problems.

The conditions are ascertained under which the solutions of the

Card 2/3



L 31297-65
ACCESSION NR: AR5004797

boundary problems and of the Cauchy problem of Ka. (4) Attaining to the solutions of ordinary differential equations (from the introduction.)

SUB CODE: MA ENCL: 00

Card 3/3

L 31298-65 EWT(d) IJP(c)
ACCESSION NR: AR5004798 S/0044/64/000/011/B056/B056

SOURCE: Ref. zh. Matematika, Abs. 11B256

AUTHOR: Khushutdinova, Z. V.

TITLE: On intermediate asymptotic solutions of boundary value problems for the nonlinear equation of thermal conductivity

CITED SOURCE: Sb. funktsional'n. analiz i teoriya funktsiy. No. 1, 1964, Kazan', Kazansk. un-t, 1963, 108-113

TOPIC TAGS: differential equation, thermal conductivity equation, nonlinear equation, asymptotic solution, convergence, boundary value problem

TRANSLATION: The asymptotic behavior is investigated of the solutions of the nonlinear equation of thermal conductivity

Card 1/3

L 31298-65
ACCESSION NR: AR5004798

$$\frac{\partial^2 u}{\partial x^2} = \frac{\partial \varphi(u)}{\partial t} \quad (\varphi'(u) \geq a > 0),$$

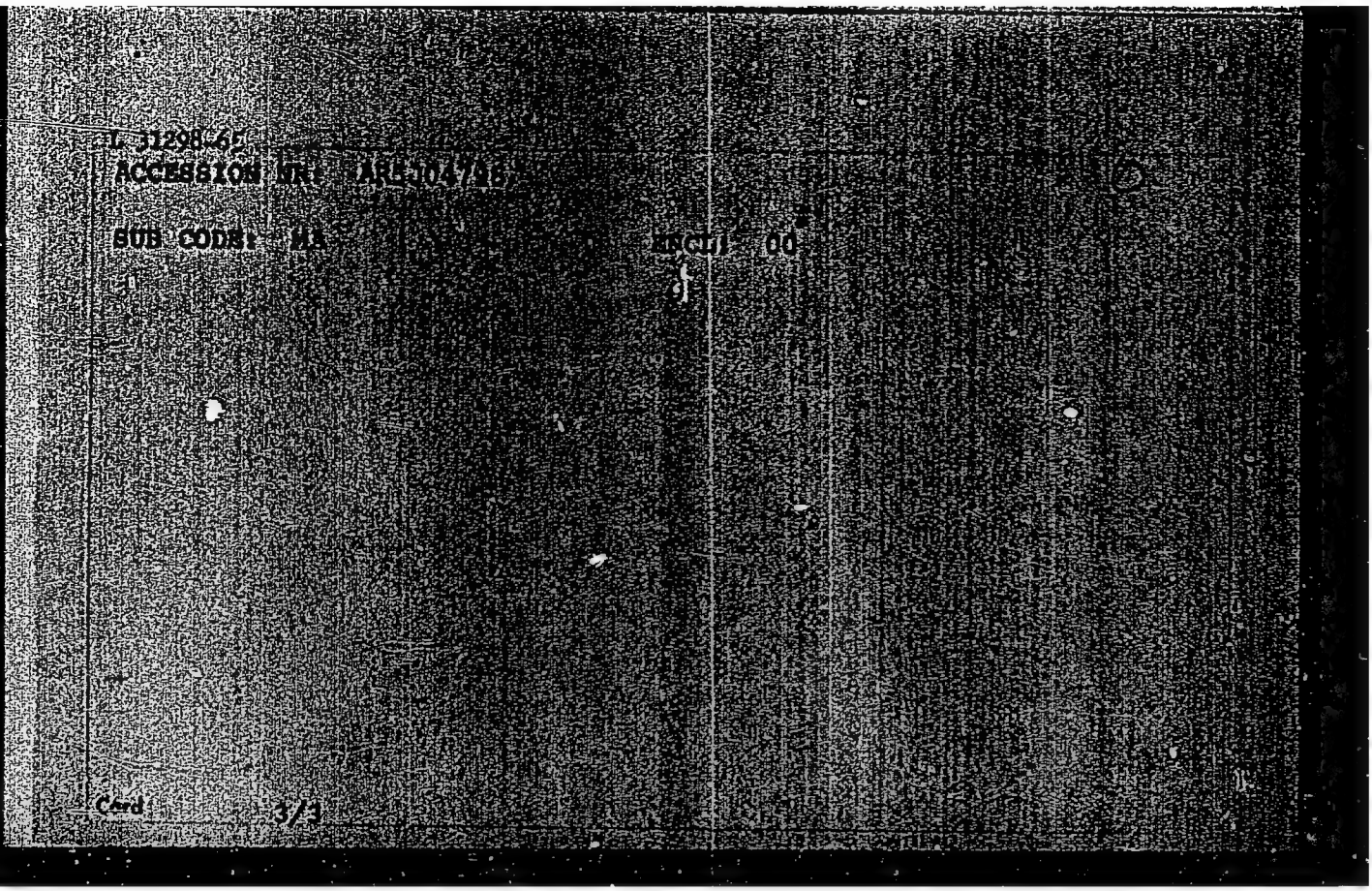
satisfying the boundary conditions

$$\begin{cases} u(0, x) = u_0(x), & x \in [0, X], \\ u(t, 0) = u_1(t), & t \geq 0, \\ u(t, X) = u_2(t) \end{cases}$$

$$\begin{cases} u(0, x) = u_0(x), & x \in [0, \infty) \\ u(t, 0) = u_1(t), & t \geq 0. \end{cases}$$

Intermediate asymptotic solutions are obtained, to which the solutions of the initial boundary-value problems converge more rapidly than the boundary values of the solutions converge to the constants u_i. Some inequalities are obtained, characterizing the behavior of the solutions of the boundary problems at $t \to \infty$. (From the Introduction.)

Card 2/3



L 47059-66 EWT(d) IJP(c) GD

ACC NR: AT6014391 SOURCE CODE: UR/0000/63/000/000/0098/0107

AUTHOR: Khusnutdinova, N. V.; Monakhov, V. N.

ORG: none

TITLE: Stabilization of solutions to boundary value problems and the Cauchy problem for quasi-linear equations

SOURCE: Kazan. Universitet. Funktsional'nyy analiz i teoriya funktsiy, no. 1, 1963, 98-107

TOPIC TAGS: Cauchy problem, boundary value problem, first boundary value problem

ABSTRACT: This is a more general extension of a previous work by the same author (Materialy 1 konferentsii molodykh nauchnykh rabotnikov g. Kazani, sek. fiz.-mat., 1959). Consideration is given to the behavior as $t \to \infty$ of solutions: in the range p $\{t \geq 0,\ 0 \leq x \leq X\}$, of the boundary value problem for the equation

$$\frac{\partial^2 u}{\partial x^2} - A(t, x, u)\frac{\partial u}{\partial t} - B(t, x, u)\frac{\partial u}{\partial x} - C(t, x, u)u = 0$$
$$(A(t, x, u) \geq a_0 > 0,\ B(t, x, u) \leq 0,\ C(t, x, u) \geq 0) \qquad (1)$$

with the conditions

$$\begin{cases} u(0, x) = u_0(x) \\ u(t, 0) = u_1(t) \\ u(t, X) = u_2(t) \end{cases}, \qquad (2)$$

Card 1/2

KHUSNUTDINOVA, R.

33242 . Usloviya Prigotovleniya Fermenta I ego Aktivnost', (S Primech. Red.) Moloch. Prom-st'. 1949, No10 c. 36-37

SO: Letopis' Zhurnal'nykhStatey, Vol. 45, Moskva, 1949

S/044/62/000/010/015/042
B180/B186

AUTHOR: Khusnutdinova, S. Kh.

TITLE: The general boundary problem of a thermal-conductivity equation for a one-dimensional case with a discontinuous coefficient at one point

PERIODICAL: Referativnyy zhurnal. Matematika, no. 10, 1962, 61-62, abstract 10B286 (Tr. Mekhan.-matem. fak. Kazakhsk. un-t, v. 1, no. 2, 1960, 260-265)

TEXT: The article deals with the solution to the problem

$$\frac{\partial u}{\partial t} = a^2(x)\frac{\partial^2 u}{\partial x^2}\ (x > 0,\ t > 0),\ a(x) = \begin{cases} a_1, & x < x_0, \\ a_2, & x > x_0 \end{cases}$$

with the initial condition $u(x,0) = f(x)$, the conjugation conditions for $x = x_0$

$$u(x_0 - 0, t) = u(x_0 + 0, t),$$
$$k_1 \frac{\partial u}{\partial x}\Big|_{x_0 - 0} = k_2 \frac{\partial u}{\partial x}\Big|_{x_0 + 0}$$

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The general boundary problem ...

and the boundary conditions

$$\sum_{r=0}^{n} a_r \left.\frac{\partial^r u}{\partial x^r}\right|_{x=0} = \varphi(t),\ u(x, t) \to 0$$

at $x \to \infty$. The method of operational calculus is used to prove the theorem; if f(x) can be integrated over (0, ∞) and has continuous derivatives up to and including the (n - 1)-th order in the vicinity of the coordinate origin and can be twice differentiated at $0 < x < \infty$, while $\varphi(t)$ has a piece-wise continuous derivative

$$\varphi'(t) = O\left(\frac{1}{t^{1-\varepsilon}}\right)(\varepsilon > 0),$$

for $t > 0$ in the vicinity $t = 0$, then there is a solution u(x,t) to the problem formulated. [Abstracter's note: Complete translation.]

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39392
S/044/62/000/006/046/127
B156/B112

24.5200

AUTHOR: Khusnutdinova, S. Kh.

TITLE: The general boundary problem of the equation for thermal conductivity, for the one-dimensional case with a coefficient discontinuous at m points

PERIODICAL: Referativnyy zhurnal. Matematika, no. 6, 1962, 93-94, abstract 6B397 (Tr. Kazakhsk. S.-kh. in-ta, v. 8, no. 3, 1960, 147-152)

TEXT: A solution to the equation of thermal conductivity is sought by the operational method:

$$\frac{\partial u}{\partial t} = a^2(x)\frac{\partial^2 u}{\partial x^2} \quad (x \geqslant 0,\ t \geqslant 0), \tag{1}$$

$$a(x) = \begin{cases} a_1 \text{ at } x < x_0, \\ a_{l+1} \text{ at } x_{l-1} < x < x_l \ (l=1, 2, \ldots, m-1), \\ a_{m+1} \text{ at } x > x_{m-1}, \end{cases}$$

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The general boundary problem of the ...

the solution satisfying the conditions $u(x,0) = 0$,

$$u(x,t)\Big|_{x_1-0} = u(x,t)\Big|_{x_1+0}, \qquad (2)$$

$$k_{l+1}\frac{\partial u}{\partial x}\Big|_{x_1-0} = k_{l+2}\frac{\partial u}{\partial x}\Big|_{x_1+0} \quad (l = 0, 1, \ldots, m-1),$$

$$\sum_{r=0}^{n} a_r \frac{\partial^r u}{\partial x^r}\Big|_{x=0} = \varphi(t), \quad u(x,t)\to 0 \text{ at } x\to\infty, \qquad (3)$$

where the function $\varphi(t)$ has a piecewise continuous derivative for $t > 0$, and the derivative $\varphi'(t)$ has the singularity $O(1/t^{1-\varepsilon})$ $(\varepsilon > 0)$ in the vicinity of $t = 0$. A representation of the function $u(x,t)$ is obtained in the form of a composite expression, in which the quantity $\Phi(p)/D$ is a factor; in this quantity $\Phi(p)\to\varphi(t)$, and D is related to p in a complex manner. The kernels of the function D(p) cannot be found in

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The general boundary problem of the ...

an explicit form, and the inverse image of the function $\phi(p)/D$ thus cannot be determined in the normal manner. A method whereby the inverse image of the function $\phi(p)/D$ is found without determining the roots of the function $D(p)$ is proposed. Let $\phi(p)/D \Rightarrow \psi(t)$, and let the function $\psi(t)$ satisfy the initial conditions

$$\psi(0) = \psi'(0) = \ldots = \psi^{k-1}(0) = 0,$$

while $k = \frac{n+1}{2}$ if n is odd, and $k = \frac{n}{2}$ if n is even. Using the first condition (3) and making an Abel transformation, we then get an integral equation for the function $z(t)$, which is linked with ψ by the relation

$$\psi(t) = \int_0^t z(\tau) \frac{(t-\tau)^{k-1}}{(k-1)!} d\tau. \qquad (4)$$

The solution for z is in the form

$$z = \varphi(t) + \int_0^t R(t-\tau)\varphi(\tau)\, d\tau, \qquad (5)$$

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The general boundary problem of the ...

where $R(t-\tau)$ is the resolvent of the kernel $K(t-\tau)$, the expression for which we know, and $f(t)$ is a known function. The following theorem is proved : If the inverse image $f(t)$ of the function $\phi(p)$ has a piecewise continuous derivative for $t>0$, and $f'(t)$ is singular at $t=0$, $O(1/t^{1-\varepsilon})$ $(\varepsilon>0)$, the inverse image $\psi(t)$ of the funotion $\phi(p)/D$ is determined by equation (4), and the function z by equation (5).
[Abstracter's note: Complete translation.]

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15.9201 1372, 1436, 1474

11.2211

S/190/61/003/011/013/016
B110/B147

AUTHORS: Ushakov, V. D., Mezhirova, L. P., Galata, L. A., Kratyuk, A. G., Khusnutdinova, Z. S., Medvedev, S. S., Abkin, A. D., Knomikovskiy, P. M.

TITLE: Polymerization of styrene and butadiene with styrene in emulsions under the action of initiating redox systems. I. Effect of the nature of peroxide compounds on the rate of polymerization

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 11, 1961, 1716-1722

TEXT: Aim of the present work was the determination of the most active initiating redox systems for the polymerization of butadiene with styrene in emulsions, and especially of the effect of the nature of peroxides on the rate of polymerization. Nekal with 20 % of Na_2SO_4 and NaCl and mersolate (mixture of Na salts of sulfonic acids of the aliphatic series: $C_{15}H_{31}SO_3Na$) with $\leq$ 5 % of NaCl served as emulsifiers. Peroxides were used

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Polymerization of styrene and...

an oxidants (Table). Potassium ferrocyanide and ferrous pyrophosphate complex (IV) served as reducing agents. The rate of polymerization was determined either dilatometrically or from the yield of polymer (in ampuls). Polymerization took place at 5°C with an excess of butadiene, styrene with peroxides dissolved in it (10 % solution), and the calculated amount of emulsifier solution. A suspension of the ferrous pyrophosphate complex was added at a certain temperature by means of medical syringes. Substances used: (1) mersolate (3 % by weight added to water, ratio monomer : emulsifier 1 : 5); (2) potassium ferrocyanide. The temperature was varied between 0 and 40°C. Seven peroxides were investigated in amounts equivalent to 0.07 and 0.1 % by weight of isopropyl benzene hydroperoxide. $K_4Fe(CN)_6$ was used in concentrations equimolecular to hydroperoxide. p-tert-butyl isopropyl benzene hydroperoxide (I) had the optimum rate of polymerization; that of ethyl isopropyl benzene peroxide, isopropyl benzene- (II), and diisopropyl benzene hydroperoxide was lower, that of dibenzyl hydroperoxide still lower, and that of benzoyl peroxide the lowest. Polymerization with H_2O_2 proceeds fast at the beginning, then it decreases strongly, since H_2O_2 and the reducing agent are readily soluble in water. With 0.2-0.5 % by weight

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of II, only the initial rate increases. The total yield is lower than with 0.1 % by weight of II. Between 0.75 and 1 % by weight of II, initial rates and total yield are much lower. With 0.02-0.2 % by weight of I, initial rates increase. Since the total rate decreases at 0.2 % by weight, the dependence of the reaction rate on the hydroperoxide concentration is probably linked with the inhibiting effect of the decomposition products of hydroperoxide. With 0.1 % by weight of I and an equimolecular amount of $K_4Fe(CN)_6$, both total yield and initial rate increased with increasing temperature. The activation energies were determined according to the Arrhenius equation and found to be: E = 8.6 kcal/mole for II and E = 5.7 kcal/mole for I. Reduction of E by 3 kcal/mole at ~ 0°C corresponds to a 200-fold increase of the reaction rate. Since the rate is twice as high at 0°C, the pre-exponential factor in the Arrhenius equation increases by 10^2 times with decreasing activation energy of I. For the copolymerization of butadiene with styrene (ratio 70 : 30) at 5°C, the following was used: Nekal (2.8 and 1.4 % by weight added to water). 0.44 % by weight of ferropyrophosphate (related to iron sulfate) of the monomer. The ratio organic phase : aqueous phase was 1 : 4 (by weight). In the case of 0.34 %

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by weight of hydroperoxide of II (equimolar ratio to the monomer) optimum rate was achieved with IV. The highest yield was achieved with aryl-alkyl hydroperoxides (I and 1,1-diphenyl ethane hydroperoxide (III)) (Table). With an emulsifier concentration of 2.8 %, maximum conversion (70-75 %) was achieved after 2 hr with 0.2 % by weight of I and with 0.3 % by weight of III. With 0.34 % by weight of II, optimum conversion (~30 %) was achieved after 2 hr. Polymerization of I and IV with 1.4 or 2.8 % by weight of emulsifier was constant up to 30 % conversion, then the rate dropped. With 1.4 % by weight, the initial rate was lower and the decrease more distinct. With an addition of 0.1 % by weight of hydroperoxide + 0.26 % by weight of IV (after 1 hr now addition of 0.1 % by weight of hydroperoxide and 0.16 % by weight of IV), constant polymerization took place up to 60 % conversion. Thus, the consumption of the initiating system causes a decrease in rate. The efficiency of redox systems and initiators depends on the reactivity of the radical as well as on the solubility of the peroxide compounds in the aqueous phase and in the monomers. The lower the solubility in water, the lower the loss and the stronger the initiating action. I + IV cause a higher rate of reaction than II + IV due to lower activation energy and lower solubility in water. For II + IV, the redox reaction occurs at the

29761
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Polymerization of styrene and...

phase boundary, for I + IV also in the aqueous phase. The existence of a maximum of the rate of polymerization for I and butylisopropyl hydroperoxide is caused by polymerization inhibition due to the decomposition products of the hydroperoxides. The authors thank A. G. Pod"yapol'skaya for help with experiments and T. I. Yurzhenko (L'vovskiy industrial'nyy institut (L'vov Industrial Institute)) for supplying some hydroperoxides. There are 5 figures, 1 table, and 7 references: 4 Soviet and 3 non-Soviet. The two references to English-language publications read as follows: F. A. Bovey, I. M. Kolthoff, Emulsion Polymerization, New York, 1955; C. F. Fryling, Industr. and Engng. Chem., 41, 986, 1949.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: December 28, 1960

Card 5/1

15 9201 13 72, 1436, 1474

27742
S/190/61/003/011/014/016
B110/B147

AUTHORS: Ushakov, V. D., Mezhirova, L. P., Galata, L. A., Khusnutdinova, Z. S., Sheynker, A. P., Medvedev, S. S., Abkin, A. D., Khomikovskiy, P. M.

TITLE: Polymerization of styrene and butadiene with styrene in emulsions under the action of initiating redox systems. II. Effect of the nature of the reducing agent on the rate of polymerization

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 11, 1961, 1723-1729

TEXT: The effect of the reducing component of initiating systems and of the addition of a second reducing agent on the rate of polymerization is studied. Used were systems of hydroperoxides (HP) of isopropyl benzene (I) or p-tert-butyl isopropyl benzene (II) with ferropyrophosphate complex (III), potassium ferrocyanide (IV), ferrous sulfate with o-phenanthroline, or of complexes of α,α-dipyridyl with ferrous oxalate. Sodium bisulfite and the bisulfite compound of acetone served as reducing

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Polymerization of styrene and. .

agents (without metals of variable valency). Monoethanolamine, dioxyacetone (I), sodium bisulfite, and the bisulfite compound of acetone were additional reducing agents. Their effect was investigated with systems of two I of different initiating activity and two complex compounds of bivalent iron. The ratio hydrocarbons (70 % by weight of styrene : 30 % by weight of butadiene) : water was 1 : 4. 2-8 % by weight of emulsifier (Nekal, Mersolate) were used. Optimum rate of polymerization was established at 0.54 % by weight of HP I and 0.2 % by weight of HP II (related to monomer). At the copolymerization butadiene-styrene by means of HP I + III, the optimum rate of polymerization was established for $FeSO_4 \cdot 7H_2O$ and $Na_4P_2O_7 \cdot 10H_2O$ = 0.75 : 1. Increase of the concentration of I of from 0.55 to 0.70 moles/mole of HP I accelerates the process considerably. After 4 hr, the polymer yield increases to ~ 48 % at an increase of III from 0.2-0.35 moles/mole of hydrogen peroxide, and to 65 % at a further increase. At 5°C, additional reducing agents hardly affect the rate of polymerization. At 20°C, addition of V to I + III causes polymerization acceleration and 75 % monomer conversion after 5 hr, which is only 40 % without V. In the system II and III optimum polymer yield is achieved at 1.5 moles of III per mole of HP II. For IV, an optimum yield

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is achieved after 4 hr at a ratio 0.3 IV : 1 HP. The high rate of polymerization for systems with III is caused by the low solubility of III in water. The redox potential of III is -200 mv. In dissolved state, it reacts with HP, but dissolves only slowly. This causes the great depth of conversion. IV with high positive potential (420 mv) is soluble in [illegible]. The rate of initiating is determined by interaction of HP with [illegible]. Polymerization is not initiated during the unproductive reaction of [illegible] soluble $NaHSO_3$ and well soluble HP I. $NaHSO_3$ and poorly soluble HP II initiate polymerization. The effect of IV on III at 20°C consists in the regeneration of the Fe^{2+} from the Fe^{3+} ions, whereby the depth of conversion increases. There are 3 figures and [illegible] references: [illegible] most recent references to English-language [illegible] T. [illegible]ll, T. Sachada, [illegible] Industr. and Engng Chem. [illegible]

[illegible]

MICHAYLOV,V.P. [Mihailov, V.P.]; GEORGIYEV, I. [Georgiev, I.]; KHUSSAR, Yu. [Khussar, Iu.]

Apropos of the proliferation of lymphoid organs following the exposure to ionizing radiations. Folia med. (Plovdiv) 6 no.2: 71-76 '64

1. Institut eksperimental'noy meditsiny AMN SSSR, Leningrad, Laboratoriya eksperimental'noy gistologii (zav. - prof. dr. V.P.Michaylov) i Vysshiy meditsinskiy institut imeni Iv.P.Pav'lova g. Plovdiv, Bolgariya, Kafedra gistologii i embriologii (Rukovoditel': dotsent I. Georgiyev [I.Georgiev]).

KHUSSAR, Yu.P. (Estonskaya SSR, Tartu, ul. Ekhitaya, 3.)

Reaction of thyroid gland eputhelium to the introduction of a foreign body following local X-irradiation. Arkh. anat., gist. i embr. 47 no. 7:96-101 Jl '64.

1. Laboratoriya eksperimental'noy gistologii (zav. - prof. V.P. Mikhaylov) Institute eksperimental'noy meditsiny AMN SSSR, Leningrad. Submitted May 4, 1963.

AREND, Yu.E. [Arend. J.]; KHUSSAR, Yu.P. [Hussar, J.]

Effect of the preparation Vipratox on the morphology of various organs and the reactivity of connective tissues. Farmakol. toksik. 26 no.3:343-348 My-Je'63 (MIRA 17:2)

1. Kafedra gistologii (zav. - prof. Yu.T.Tekhver [Tehver, J.]) Tartuskogo gosudarstvennogo universiteta.

KHUSSAR, Yu.P. (Estonskaya SSR, Tartu, ul.Ekhitaya, 3-1)

Mitotic regime of the cells in the tissue of the thymus gland in acute radiation sickness. Arkh. anat., gist. i embr. 42 no.4:59-66 Ap '62. (MIRA 15:6)

1. Laboratoriya eksperimental'noy gistologii (zav. - prof. V.P. Mikhaylov) Instituta eksperimental'noy meditsiny AMN SSSR.
(RADIATION SICKNESS) (THYMUS GLAND) (CELL DIVISION (BIOLOGY))

KHUSSAR, Yu.P.

Protective action of cystamire on thyroid gland tissues in acute radiation sickness. TSitologiia no.1:91-93 Ja-F'63. (MIRA 16:6)

1. Laboratoriya eksperimental'noy gistologii Instituta eksperimental'noy meditsiny AMN SSSR, Leningrad.
(THYROID GLAND) (RADIATION SICKNESS) (ETHYLAMINE)

(5)

Geriatrics

BULGARIA

MATEEV, Dr., VULNAROV, L., BOYADZHIEV, E., MANCHEVA, and KHUSTEVA, T., Center of Gerontology and Geriatry, MNZSG

"Changes in the Anthropometric and Hemodynamic Indices of Aged and Old People Under the Effect of Functional Loading with Physical Exercises"

Sofia, Eksperimentalna Meditsina i Morfologiya, Vol 5, No 2, pp 114-118

Abstract: The anthropometric, physiological, and hemodynamic indices of persons with an average age of 75 yrs who exercised and participated in sports were compared with those of a control group of people of the same age who did not exercise systematically. The people who exercised systematically were divided into two subgroups, those who exercised regularly and those who did not exercise regularly, while the people in the control group were divided into a subgroup of active people and another of passive people. The comparison showed that beneficial changes took place in the group that exercised and that these changes were more pronounced for the subgroup that exercised regularly. Tables, 15 references (4 Bulgarian, 8 USSR, 3 Western). Manuscript received Jun 65. Russian and English summaries.

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ACC NR: AT6035603 SOURCE CODE: HU/2504/66/053/01-/0003/0015

34

B+1

AUTHOR: Huszthy, L.--Khusti, L.

ORG: Technical University for the Heavy Industries, Miskolc

TITLE: Approximation for computing the sag of involute teeth 17

SOURCE: Acta technica academiae scientiarum Hungaricae, v. 53, no. 1-2, 1966, 3-15

TOPIC TAGS: bending stress, shear stress, approximation

ABSTRACT: The method described for the approximation of the sag resulting from bending and shear forces employs the use of a curve representing a simplified function of the factors involved in producing the sag. The equations characterizing the effects of the individual forces involved were derived and an approximating curve for the tooth flank was prepared. The method whereby the sag of involute teeth can be approximated was described and illustrated with numerical examples. The error of the approximation was found to be ~ 5%. Orig. art. has: 3 figures and 13 formulas. [JPRS: 35,328]

SUB CODE: 20, 12 / SUBM DATE: 24Feb58 / ORIG REF: 001

Card 1/1 fv

0922

LINNIK, Yu.V. (Leningrad); Khusu, A.P. (Leningrad)

Mathematical statistical account of surface-unevenness contours following polishing. Inzh. sbor. 20:154-159 '54. (MLRA 8:7)
(Surfaces (Technology)) (Grinding and polishing)

LINNIK,Yu.V. ; KHUSU,A.P., starshiy nauchnyy sotrudnik

Statistical characteristics of surface profilograms. [Izd.] LONITOMASH no.34:223-229 '54. (MLRA 8:10)

1. Chlen-korrespondent Akademii nauk SSSR (for Linnik). 2. Leningradskiy gosudarstvennyy universitet imeni A.A.Zhdanova.
(Surfaces (Technology))

HALD, Anders, 1913- ; VOROB'YEV, N.N. [translator]; PETROV, V.V. [translator]; KHUSU, A.P. [translator]; LINNIK, Yu.V., redaktor

[Statistical theory with engineering applications. Translated from the English] Matematicheskaia statistika s tekhnicheskimi prilozheniiami. Perevod s angliiskogo N.N. Vorob'eva, V.V.Petrova i A.P. Khusu. Pod red. IU.V.Linnika. Moskva, Izd-vo inostrannoi lit-ry, 1956. 664 p. (MLRA 10:3)
(Mathematical statistics)

KHUSU, A.P.

On some functional on random fields [with summary in English, p.208]. Vest.Len.un. 12 no.1:37-45 '57. (MIRA 10:5)
(Functional analysis)

LINNIK, Yu.V.; KHUSU, A.P. (Leningrad)

Statistical analysis of the roughness of profiles subjected to grinding. [Izd.] LONITOMASH 47:144-146 '58. (MIRA 11:10)
(Grinding and polishing) (Mathematical statistics)

15(2) SOV/131-59-12-7/15

AUTHORS: 1) Veselova, Z. I. (Deceased), 2) Khusu, A. P.

TITLE: On the Accelerated Statistic Control Method of the Quality of Refractories

PERIODICAL: Ogneupory, 1959, Nr 12, pp 566-571 (USSR)

ABSTRACT: In the Borovichskiy kombinat ogneuporov (Borovichi Kombinat of Refractories) up to 250 t of products are annually destroyed in the control and more than 20000 measurements of porosity and 15000 measurements of pressure - breaking strength are made. In the present paper control methods are investigated which are less time- and energy robbing and do not cause destruction of products. Parameters characterizing the quality of products may be divided into 2 groups: such, which do not cause destruction of products and such which do. By the determination of the statistic dependence between parameters of both groups the parameters of the second group may be determined on the basis of measured parameters of the first group and a destruction of products in the control is unnecessary. The weight, volume and frequency of the natural oscillation are regarded as parameters of the first group. On their basis the weight by volume, the apparent porosity and

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pressure - breaking strength were determined. In order to determine the statistic dependences the experimental material of the Semilukskiy zavod (Semiluki Works) and the Borovichi Kombinat of Refractories were investigated with respect to the control of furnace bricks of type D-2, of ladle bricks of type KP-3 and air-heating bricks of type V-10. Table 1 gives the spread of properties within one kind of bricks and figure 1 gives the spread of individual parameters of a standard brick. Further formulas are written down for the calculation of the mean square deviation and the correlation coefficient between two parameters. Table 2 shows the statistic characteristics of a standard brick of class B of the Semiluki Works. 3 formulas are given for the calculation of properties of a standard brick of the Semiluki Works. Figure 2 shows that there is agreement between the experimental and calculated data. In the case of mass controls calculation formulas may be replaced by nomographs (Fig 3). Control of production process may be made by means of control diagrams (Fig 4). In conclusion the authors state that the methodology of an accelerat-

On the Accelerated Statistic Control Method of the Quality of Refractories

ed control of quality of standard fire-clay bricks is worked out and tested in operational cycles. This method simplifies control and requires no destruction of products. Prior to introducing this control method the steadiness of production must, however, be investigated and correlations between the parameters to be controlled must be determined. There are 4 figures, 2 tables, and 4 references, 2 of which are Soviet.

ASSOCIATION: 1) Vsesoyuznyy institut ogneuporov (All-Union Institute of Refractories 2) Leningradskoye otdeleniye matematicheskogo instituta im. V. A. Steklova AN SSSR (Leningrad Department of the Mathematical Institute imeni V. A. Steklov, AS USSR)

Card 3/3